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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,655	03/10/2004	Paul D. Berger		2236

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EXAMINER

SUCHFIELD, GEORGE A

ART UNIT PAPER NUMBER

3676

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/797,655

Applicant(s)

BERGER ET AL.

Examiner

George Suchfield

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 11-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-17 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/10/04</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

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1. An examination of this application reveals that applicant is unfamiliar with patent prosecution procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skilled preparation and prosecution. The Office cannot aid in selecting an attorney or agent.

A listing of registered patent attorneys and agents is available on the USPTO Internet web site <http://www.uspto.gov> in the Site Index under "Attorney and Agent Roster." Applicants may also obtain a list of registered patent attorneys and agents located in their area by writing to the Mail Stop OED, Director of the U. S. Patent and Trademark Office, PO Box 1450, Alexandria, VA 22313-1450.

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-10, drawn to a method of method of recovering crude oil from a subterranean hydrocarbon formation, classified in class 166, subclass 270.1.
- II. Claims 11-17, drawn to a composition, classified in class 507, subclass 259.

3. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product of composition could be used in a cleaning formulation for above-ground cleaning operations.

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4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Paul Berger on November 22, 2005 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-10.

Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-17 stand withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

8. The disclosure is objected to because of the following:

The BRIEF DESCRIPTION OF THE DRAWINGS in page 5 of the specification erroneously refers to "Figure 1" twice. It appears that in line 19 of page 5, "Figure 2" was intended.

In page 7, line 18, note the recitation "three steps; three steps".

Appropriate correction is required.

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9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 2, 3 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 3 are deemed indefinite in being drawn to improper Markush groupings. As noted in MPEP Section 2173.05(h), the use of the phrase "selected from the group consisting of" is required in setting forth a Markush grouping. Accordingly, in line 1 or 2 of each of these claims, the recitation -- consisting of -- should follow the term "group".

Claim 7 recites the limitation "the injection wells" and "the production wells" in lines 2 and 3. There is insufficient antecedent basis for this limitation in the claim. In this regard, parent claim 1 only refers to a single "injection well" and "production well".

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chou et al (6,269,881) in view of Berger et al (6,043,391).

Chou et al discloses a process for recovering crude oil from a subterranean hydrocarbon-containing formation, i.e., an enhanced oil recovery process, through the injection of an aqueous surfactant composition comprising an alkylaryl alpha-olefin sulfonate surfactant formulated from the C10+ bottoms stream of a commercial ethylene synthesis reactor, as called for in claim 1.

Chou et al does not disclose the use of a surfactant composition for enhanced oil recovery which further comprises an alkali component, however Berger et al (note EXAMPLE 7 or col. 11, line 13 – col. 12, line 33) similarly discloses a process of recovering crude oil from a subterranean hydrocarbon-containing formation, or an enhanced oil recovery process, through the injection of an aqueous surfactant composition comprising an alkylaryl alpha-olefin sulfonate surfactant, and further comprising an alkali component, such as sodium hydroxide.

Accordingly, it would have been obvious to one of ordinary skill in the art to which the invention pertains, to similarly include an alkali component in the surfactant composition injected in the enhanced oil recovery process of Chou et al, as taught by Berger et al, in order to further reduce the interfacial tension of the surfactant composition, and thus increase the oil displacement efficiency of the Chou et al process, as demonstrated and taught by Berger et al (note Table 16 in col. 12).

As per claims 2 and 3, one or more of the alkali components, such as sodium hydroxide, are encompassed by the modified Chou et al process. Similarly, the concentration range of alkali

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component recited in claim 4 is deemed encompassed by the corresponding concentration(s) of alkali in the Chou et al process, as modified by Berger et al (note Table 16).

As per claim 5, the surfactant composition utilized in the enhanced oil recovery process of Chou et al (note col. 3, lines 35-45) may comprise 0.5% by weight; moreover, the alkaline surfactant composition of Berger et al, when employed in an enhanced oil recovery process, may comprise an exemplary surfactant concentration of "0.3 wt %".

The remaining steps and/or limitations recited in claims 6-10 all appear encompassed in the modified process of Chou et al. For example, Chou et al may employ an alkylaryl alpha-olefin sulfonate surfactant having a carbon chain of C12 to C30; an  $AlCl_3$  or HF catalyst is employed for the alkylation, with the neutralization step accomplished through the use of sodium hydroxide.

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The cited references to Kerfoot et al (3,933,201) and Hsu et al (6,022,834) both disclose enhanced oil recovery processes wherein the oil displacement efficiency of a sulfonate surfactant composition(s) is enhanced by the further inclusion of an alkali component .

15. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

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## Certificate of Mailing

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Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Suchfield whose telephone number is 571-272-7036. The examiner can normally be reached on M-F (6:30 - 3:00).



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Glessner can be reached on 571-272-6843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
George Suchfield  
Primary Examiner  
Art Unit 3676

Gs  
November 29, 2005